



# And the **winner** is . . .

## *NERC's Inaugural Impact Awards*

This year for the first time we ran a competition to recognise and reward those NERC scientists whose work has made a major contribution to the UK's economy, society, wellbeing and international reputation.



A shortlisting panel whittled down the 82 applications to two finalists in each category of impact: economic, social, early-career and international.

The winners were announced at a prize-giving ceremony in January, hosted by physicist and broadcaster Professor Jim Al-Khalili.

● The winner in each category received £10,000 to further the impact of their research, while the runners-up each received £5,000. A further £30,000 was awarded to the overall winner. You can see videos featuring the work of all the finalists on our YouTube channel: [www.youtube.com/user/NERCscience](http://www.youtube.com/user/NERCscience)

### SOCIETAL IMPACT



#### **RUNNER-UP:**

**Protecting homes and lives from coastal flooding**

*Professor Kevin Horsburgh and team, National Oceanography Centre.*

An estimated four million people and £150bn of assets are at risk from coastal flooding in the UK. The team's modelling and statistical work on storm surge, waves and sea-level extremes, underpins many aspects of government policy on coastal defence and flood risk. While the storms of winter 2013 marked some of the most extreme weather of recent years, thanks to improvements in forecasting and investment in coastal defences some 10,000 properties were safely evacuated and there was only minor flooding.



#### **WINNER:**

**Bringing back the large blue butterfly**

*Professor Jeremy Thomas, University of Oxford (previously NERC's former Institute of Terrestrial Ecology).*

In 1979, after a century of failed conservation efforts, the iconic large blue butterfly was declared extinct in the UK. But after 40 years of field and lab research the species has been successfully reintroduced. Thomas's work helped identify how this extreme specialist can survive under changing climates. This led to new, larger and more stable populations, an expansion of its range into cooler UK regions and new, more robust, races. The species' global conservation status has been upgraded from 'vulnerable' to 'near threatened' and it is one of just three UK butterflies to meet the Convention on Biological Diversity's target to reverse species' declines by 2010.

## ECONOMIC IMPACT



**RUNNER-UP:**  
**A blueprint for flood-risk management**  
*Professor Paul Bates and team, University of Bristol.*

A computer model to predict flood risk has served as a blueprint for the flood-risk management industry worldwide. The technology has been cloned by numerous risk-management consultancies, saving commercial developers' time and improving the predictive capability of the models used in this multimillion-pound global industry, which affects tens of millions of people every year. A start-up company is making the flood-hazard information available to the general public via Google Earth.



**WINNER:**  
**Creating jobs and cleaner water**  
*Dr Stephen Boulton and team, University of Manchester.*

New instruments for monitoring water and gas quality in the environment were licensed to Siemens and Ion Science by spin-out company Salamander; generating royalties of £7m over the past five years. Since its launch, Salamander has employed 14 Manchester graduates and created jobs and investment elsewhere in the UK and overseas. Their water products, now recommended by the regulator, are used by all major UK water service providers. Their gas product is stimulating growth in the market for monitoring greenhouse gases from fossil fuel extraction, such as shale gas and coal-bed methane.

## EARLY-CAREER IMPACT



**RUNNER-UP:**  
**Keeping bumblebee parasites at bay**  
*Dr Peter Graystock, University of Leeds (now at University of Bristol).*

Bumblebees are imported on an industrial scale to pollinate a number of important crops. Graystock's PhD research, in partnership with the Bumblebee Conservation Trust, found that these commercially-reared imports were infected with a number of parasites, which can be passed on to UK native bumblebees and other bee species. In response, Natural England now enforces stricter screening procedures on bumblebee imports. They are currently consulting on a proposed ban on imports of all non-native species.



**WINNER:**  
**Forecasting floods for a safer future**  
*Professor Hannah Cloke, University of Reading.*

Since completing her PhD, Cloke has led a continuous programme of research aimed at improving our understanding of flood risk, developing new ways to identify flood-forecast uncertainty and allow for both the most likely and possible extreme scenarios to be identified. This is helping policymakers make informed decisions on flood-preparation – such as when to shut a flood-gate or whether or not to evacuate. Working with UK industry and flood-forecasting agencies in the UK, Europe and Far East, Cloke has brought about changes in decision-making practice, better flood warnings and a reduction in flood risk around the world.

## INTERNATIONAL IMPACT



**RUNNER-UP:**  
**Giving advanced warning of weather extremes**  
*Professor Mark Saunders and team, University College London.*

The team's research has underpinned the development of seasonal forecasts and the real-time monitoring of tropical storms and European extreme weather. Over the last ten years these services have generated nearly £1.5m in commercial product sales as well as free storm alerts or seasonal forecasts to more than 24,000 subscribers and re-insurance companies worldwide. They also helped save lives in Bangladesh from cyclone Sidr and tropical storm Mahasen.



**WINNER – INTERNATIONAL AND OVERALL IMPACT AWARD:**

**Healing the ozone hole to save our skin**  
*Professor John Pyle, Dr Neil Harris and colleagues, University of Cambridge and the National Centre for Atmospheric Science.*

The team's atmospheric research has played a leading role in demonstrating the effect of man-made gases on the ozone layer, and the consequences for human health. Their contributions played a key part in the strengthening of the Montreal Protocol, widely regarded as one of the most successful international agreements ever enacted. The protocol, along with other pieces of related legislation, has ensured the rapid phase-out of ozone depleting substances. As a result, the hole in the ozone now appears to be slowly closing, preventing a number of UV-related health problems worldwide, including skin cancer, sunburn and cataracts.